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**Education:**

North Carolina State University	Zoology with Statistics and Modeling minor	Ph.D.	1994
University of Rhode Island	Oceanography, biological option	M.S.	1990
Trinity College	Biology	B.S.	1985

Dissertation Title: Causes and consequences of growth variability in young fishes.

**Employment:**

1995-	Biological Resources Division/USGS, Ecology section leader Anadromous Fish Research Center, Turners, Falls, MA, and adjunct associate professor Department of Natural Resources Conservation, University of Massachusetts
1994-1995	Oak Ridge Postdoctoral Fellow (with Dr. David Conover) State University of New York, Stony Brook, NY
1992-1994	Electric Power Research Institute Fellow North Carolina State University, Raleigh, NC
1990-1992	Wisconsin Sea Grant Fellow North Carolina State University, Raleigh, NC
1987-1990	URI-USEPA Cooperative Research Fellow University of Rhode Island, Kingston, RI
1986-1987	Research Assistant, Center for Coastal Studies Provincetown, MA.
1985-1986	Research Assistant, University of Massachusetts, Amherst, MA.

**Professional Activities:**

Associate Editor, Transactions of the American Fisheries Society (1998-2001)

Co-Book review editor, American Fisheries Society (2005- )

Professional societies:

American Association for the Advancement of Science

Ecological Society of America

American Fisheries Society

AFS Early Life History Section (North East representative)  
AFS Southern New England Chapter-At large representative  
NASCO Assessment Committee representative  
Member of the Genetics subcommittee of the Connecticut River Atlantic salmon technical committee  
Science advisor to The Nature Conservancy's Connecticut River program

**Teaching experience:**

Fisheries ecology Teaching Assistant, North Carolina State University, 1992  
Individual-based modeling, SUNY Stony Brook, 1995  
Ecology of individuals, University of Massachusetts, 1997  
Evolution of migration, University of Massachusetts, 1999  
Evolution and ecology of migration, University of Massachusetts, 2000  
Ecology of diadromous fishes (team taught), University of Massachusetts, 2002, 2004, 2008  
Analysis of mark-recapture data, University of Massachusetts, 2004  
Analysis of mark-recapture data, University of Massachusetts, 2005  
Analysis of mark-recapture data, University of Massachusetts, 2008  
Data management and manipulation (supervised PhD student), University of Massachusetts, 2005

**Publications:**

- Charney, N. D., B. H. Letcher, A. Haro, P. S. Warren. **in Press**. Terrestrial Passive Integrated Transponder Antennae for Tracking Small Animal Movements. *Journal of Wildlife Management*.
- Horton, G.E., and B.H. Letcher. 2008. Movement patterns and study area boundaries: influences on survival estimation in capture-mark-recapture studies, *Oikos* 117(8): 1131-1142.
- O'Donnell, M. J. and B.H. Letcher. 2008. Cohort- and location-specific growth of Connecticut River American shad: influence on outmigration representation and timing, *River Research and Applications*, 24:929-940.
- Letcher, B.H., G.E. Horton. 2008. Power of multistate mark-recapture models to detect the presence of selection: selection on body size in juvenile Atlantic salmon, *Can. J. Fish. Aquat. Sci.*, 65: 1649-1666.
- J. A. Coombs, B. H. Letcher, and K. H. Nislow. 2008. CREATE: Software to create input files from diploid genotypic data for 50 genetic software programs. *Molec. Ecol. Res.* 8(3): 578-580. doi: 10.1111/j.1471-8286.2007.02036.x
- Sigourney, D.B., B.H. Letcher, M. Obedzinski, and R.A. Cunjak. 2008. Size-independent growth in fish: patterns, models and metrics. *J. Fish Biol.* 72: 2435-2455.
- Carlson, S.M., A.P. Hendry, and B.H. Letcher. 2007. Growth rate differences between resident native

- brook trout and non-native brown trout, *J. Fish Biol.* 71(5): 1430-1447.
- Scace, J. and B.H. Letcher. 2007. Efficient smolt trap for sandy and debris laden streams. *N. Am. J. Fish. Manag.* 27(4): 1276-1286.
- Pearlstein, J.H., B.H. Letcher, and M. Obedzinski. 2007. Early discrimination of Atlantic salmon smolt age: time course of the relative effectiveness of body size and shape. *Trans. Am. Fish. Soc.* 136(6): 1622-1632.
- Letcher, B.H., K.H. Nislow, J.A. Coombs, M. J. O'Donnell, T. D. Dubreuil. 2007. Population response to habitat fragmentation in a stream-dwelling brook trout population. *PLoS ONE* 2(11): e1139. doi:10.1371/journal.pone.0001139.
- Horton, G.E., T. Dubreuil, and B.H. Letcher. 2007. A model for estimating passive integrated transponder (PIT) tag antenna efficiencies for interval-specific emigration rates, *Trans. Am. Fish. Soc.* 136:1165-1176.
- García De Leániz, C.G., I.A. Fleming, S. Einum, E. Verspoor, W.C. Jordan, S. Consuegra, N. Aubin-Horth, D.Lajus, B. H. Letcher, A.F. Youngson, J. Webb, L.A. Vøllestad, B. Villanueva, A. Ferguson And T.P. Quinn. 2007. A critical review of adaptive genetic variation in Atlantic salmon: implications for conservation. *Biological Reviews* 88:1-39.
- Grader, M. and B.H. Letcher. 2006. Diel and seasonal gut fullness and prey composition of Atlantic salmon parr in the west brook, *J. Freshw. Ecol.* 21(3): 503-517.
- Zydlewski, G.B., G. Horton, T. Dubreuil, B. Letcher, S. Casey, J. Zydlewski. 2006. Remote monitoring of fish in small streams: a unified approach using PIT tags. *Fisheries* 31(10): 492-502.
- Sigourney, D.B., B.H. Letcher, R.A Cunjak. 2006. Influence of beaver activity on summer growth and condition of age-2 Atlantic salmon parr. *Trans. Am. Fish. Soc.* 135(4): 1068-1075.
- Sigourney, D.B., G.E. Horton, T.L. Dubreuil, A.M. Varady, B.H. Letcher. 2005. Electroshocking and PIT tagging juvenile Atlantic salmon: are there interactive effects on growth and survival? *N. Am. J. Fisheries Manag.*, 25(3):1016-1021.
- Aubin-Horth, N. C. Landry, B. H. Letcher, and H. A. Hofmann. 2005. Alternative life-histories shape different brain gene expression profiles in males of the same population *Proc. R. Soc. B.*, 272:1655-1662.
- Aubin-Horth, N. B. H. Letcher, and H. A. Hofmann. 2005. Interaction of rearing environment and reproductive tactic on brain gene expression profiles in Atlantic salmon. *J. Hered.* 96:261-278.
- Letcher, B.H., G.E. Horton, T. Dubreuil, M.J. O'Donnell. 2005. A field test of the extent of bias in selection estimates after accounting for emigration, *Evol. Ecol. Res.* 7:643-650.

- King, T.L., M. S. Eackles, and B. H. Letcher. 2005. Microsatellite DNA markers for the study of Atlantic salmon (*Salmo salar*) kinship, population structure, and mixed-fishery analyses. *Mol. Ecol. Notes*. 5 (1): 130-132.
- Letcher, B.H., T. D. Dubreuil, M. J. O'Donnell, M. Obedzinski, K. Griswold and K. Nislow 2004. Long-term consequences of variation in timing and manner of fry introduction on juvenile Atlantic salmon growth, survival and life history expression, *Can J. Fish. Aquat. Sci.*, 61:2288-2301.
- Obedzinski, M, and B. H. Letcher, 2004. Variation in early development and growth among five New England Atlantic salmon (*Salmo salar*) populations reared in a common environment. *Can J. Fish. Aquat. Sci.*, 61:2314-2328.
- Carlson, S.M., A.P. Hendry and B.H. Letcher, 2004. Natural selection acting on size, growth rate, and compensatory growth: an empirical test in a wild trout population, *Evol. Ecol. Res.*, 6:1-19.
- Spidle, A., T.L. King, and B.H. Letcher, 2004. Comparison of genetic diversity in recently founded Connecticut River Atlantic salmon population to that of its primary donor stock, Maine's Penobscot River, *Aquaculture*, 236:253-265.
- Letcher, B.H. 2003. Life history dependent morphometric variation in stream-dwelling Atlantic salmon, *Oecologia*, 137:533-540.
- Carlson, S.M., B.H., Letcher, 2003. Variation in trout survival within and among seasons, species, and age classes, *J. of Fish Biol.*, 63:780-794.
- Letcher, B.H., and G. Gries. 2003. Effects of life history variation on size and growth of stream-dwelling Atlantic salmon, *J. Fish Biol.*, 62:97-114.
- Hendry, A.P., B.H. Letcher and G. Gries. 2003. Estimating natural selection on stream-dwelling Atlantic salmon: implications for the restoration of extirpated populations. *Cons. Biol.*, 17(3):795-805.
- Henderson, J.N. and B.H. Letcher. 2003. Predation on stocked Atlantic salmon fry. *Can. J. Fish. Aquat. Sci.*, 60:32-42.
- Letcher, B.H., G. Gries and F. Juanes. 2002. Survival of stream-dwelling Atlantic salmon: effects of life history variation, season and age. *Trans. Am. Fish. Soc.*, 131:838-854.
- Gries, G. and B.H. Letcher. 2002. Tag retention and survival of age-0<sup>+</sup> Atlantic salmon following surgical implantation with passive integrated transponder tags. *Trans. Am. Fish. Soc.*, 22:219-222.

- Gries, G., and B.H. Letcher. 2002. A night-seining technique to sample Atlantic salmon (*Salmo salar*) in streams. N. Amer. J. Fish. Manag., 22:595-601.
- Mayo, C.A., B.H. Letcher, and S. Scott. 2001. Zooplankton filtering efficiency of the baleen of a North Atlantic right whale, *Eubalaena glacialis*. Journal of Cetacean Research and Management, special issue, vol. 2: 225-230.
- Letcher, B.H., and T.L. King. 2001. Parentage and grandparentage assignment with known and unknown matings: application to the Connecticut River Atlantic salmon restoration. Can. J. Fish. Aquat. Sci., 58: 1812-1821.
- Letcher, B.H., and T.D. Terrick. 2001. Effects of developmental stage at stocking on growth and survival of Atlantic salmon fry. N. Amer. J. Fish. Manag., 21: 102-110.
- Juanes, F. B.H. Letcher, and G. Gries. 2000. Ecology of stream fish: insights gained from an individual-based approach. J. Freshw. Biol., 9: 65-73.
- Letcher, B.H., and T.L. King. 1999. Targeted stock identification using multilocus genotype 'familyprinting'. Fisheries Res, 43:99-111.
- Letcher, B.H., and T.D. Terrick. 1998. Maturation of age-0 Atlantic salmon following a massive, localized flood. J. Fish Biol., 53:1243-1252
- Letcher, B.H. and Terrick, T.D. 1998. Thermal marking of Atlantic salmon otoliths. N. Amer. J. Fish. Manag., 18:406-410.
- Buckle, J., Letcher, B.H., and Conover, D. 1998. Effects of a delayed onset of piscivory on size of Age-0 bluefish. Trans. Am. Fish Soc., 127:576-587.
- Letcher, B.H., J. Walters, and J. Priddy. 1998. An individual-based, spatially-explicit model of the population dynamics of the endangered Red-cockaded woodpecker, *Picoides borealis*. Biol. Cons., 86:1-14.
- Letcher, B.H., and J.A. Rice 1997. Prey patchiness and larval fish growth and survival: inferences from a spatially-explicit, individual-based model. Ecol. Mod., 95, 29-43
- Letcher, B.H., J.A. Rice, L.B. Crowder, and F.P. Binkowski. 1997. Size- and species-dependent variability in consumption and growth rates of larvae and juveniles of three fishes. Can. J. Fish. Aquat. Sci., 54, 405-414
- Letcher, B.H., J.A. Rice, L.B. Crowder, and F.P. Binkowski. 1996. Size-dependent effects of continuous and intermittent feeding on starvation time and mass loss in starving yellow perch (*Perca flavescens*) larvae and juveniles. Trans. Am. Fish. Soc., 125, 14-26

- Letcher, B.H., J.A. Rice, L.B. Crowder, and K. Rose. 1996. Variability in survival of larval fishes; disentangling components of variance with a generalized individual-based model. *Can. J. Fish. Aquat. Sci.*, 53, 787-801.
- Letcher, B.H., and D.A. Bengtson. 1993. Effects of food density and temperature on feeding and growth of young inland silversides *Menidia beryllina*. *J. Fish Biol.*, 43; 671-686.
- Letcher, B.H., and D.A. Bengtson. 1993. Effects of food density on growth and on patterns of prey depletion by larval silverside fish *Menidia beryllina* (Cope); a laboratory investigation with image analysis. *J. Exp. Mar. Biol. Ecol.* 167, 197-213.
- Blaustein, J.D., and B. Letcher. 1987. Noradrenergic regulation of cytosol estrogen receptors in female rat hypothalamus: possible role of  $\alpha_2$ -noradrenergic receptors. *Brain Res.*, 404, 51-57.

**Manuscripts submitted:**

- Letcher, B.H., K.H. Nislow, M. J. O'Donnell. Do pools affect survival and growth rates of stream-dwelling salmonids: moving beyond presence/absence, *Ecology*
- Castro-Santos, T., B.H. Letcher, Migratory Energetics of American shad (*Alosa sapidissima*), Implications for the Conservation of an Iteroparous Anadromous Fish, *Can. J. Fish. Aquat Sci.*
- Aubin-Horth N., B. H. Letcher, and H. A. Hofmann, The genomic expression signatures of the plastic life cycle of Atlantic salmon, *Molec. Ecol.*
- Horton G E., B.H. Letcher, M M. Bailey, M. T. Kinnison, Atlantic salmon smolt production: the relative importance of survival and body growth, *CJFAS*
- Xu, C., B. H. Letcher, and K. H. Nislow, Size-dependent survival of brook trout in summer: effects of water temperature and stream flow, *Ecology*.
- Zimmerman, JKH, B.H. Letcher, K.H. Nislow, K.A Lutz, and F. J. Magilligan, Determining the effects of dams on subdaily variation in river flows at a whole-basin scale, *River Research and Applications*.
- Xu, C., B. H. Letcher, and K. H. Nislow. Overwinter survival of brook trout: do stream size, water temperature, and stream flow matter?, *J. Anim. Ecol.*
- M. J. O'Donnell, G. E. Horton and B. H. Letcher, Use of portable antennas to estimate population abundance of PIT tagged fish in small streams: factors affecting detection efficiency, *NAJFM*

**Presentations:**

- Letcher, B. H., K. Nislow, J. Coombs, T. D. Dubreuil, M. O'Donnell. Habitat-dependent growth and survival of brook trout and Atlantic salmon in a small stream – everybody in the pool? American Fisheries Society, 2008 Annual Meeting, Ottawa, ONT.
- Letcher, B.H., Extinction risk due to stream fragmentation in a brook trout population, Invited presentation at the DNR/TNC seminar series, January 2008, Boston, MA
- Letcher, B.H., K. Nislow, J. Coombs, M. O'Donnell, and T. Dubreuil. Habitat effects on resident brook trout persistence. Annual Atlantic salmon forum, January 2008, Orono, ME.
- Letcher, B.H. and Nislow, K. Extinction risk due to stream fragmentation in a brook trout population. Invited talk, Trout Unlimited Annual Meeting, April 2007, Leominster, MA.
- Letcher, BH. Extinction risk due to stream fragmentation in a brook trout population. Invited Departmental Seminar, North Carolina State University, Feb. 2007, Raleigh, NC.
- Letcher, B. H., K. Griswold, J. Coombs, Monitoring Genetically Identifiable Atlantic Salmon in the Connecticut River, Biennial Atlantic salmon forum, Feb 2007, Hadley, MA
- Letcher, B. H., T. D. Dubreuil, M. O'Donnell, J. Zydlewski, B. Connery. Brook trout growth and movements in a Maine coastal stream, Stanley Brook. Invited talk, USFWS sea-run trout workshop, Dec. 2006, Hadley, MA.
- Letcher, B. H., T. D. Dubreuil, M. O'Donnell, K. Nislow. Population consequences of Brook trout movements in a fragmented landscape. Invited talk, American Fisheries Society Meeting, Sept. 2006, Lake Placid, NY
- Letcher, B.H, Mechanisms maintaining body size variation in stream salmonids. Invited talk, International Congress on the Biology of Fishes, July 2006, St. John's Newfoundland, CA
- Letcher, B.H, Causes and consequences of body size variation in stream fish. Invited seminar, Organismic and Evolutionary Biology Program, University of Massachusetts, April, 2006.
- Letcher, B. H., T. D. Dubreuil, M. O'Donnell, K. Nislow, Linking stream flow to fish population response: relative effects of flow and temperature variation on Atlantic salmon growth and survival in a small stream. 2005 WRRC conference, Amherst MA.
- Letcher, B. H., Coombs, J., T. D. Dubreuil, M. O'Donnell, K. Nislow. Piecing together a salmonid production model for a small stream. Invited seminar, Trout unlimited Northeast region Annual Science meeting, 2005, Litchfield CT.
- Letcher, B. H., Coombs, J., T. D. Dubreuil, M. O'Donnell, K. Nislow. Piecing together a salmonid

- production model for a small stream. Invited seminar, Harvard Forest seminar series, 2005, Petersham, MA.
- Letcher, B. H., G. Horton, T. D. Dubreuil, M. O'Donnell, Selection on body size in juvenile Atlantic salmon: power of multi-state mark-recapture models to detect size dependent survival, Ecological Society of America, 2004 annual meeting, Portland Oregon.
- Letcher, B. H., G. Horton, T. D. Dubreuil, M. O'Donnell, No selection on size or growth in juvenile Atlantic salmon after accounting for emigration and probability of capture using a multistrata mark-recapture model, Evolutionary and Ecological Ethology of Fishes 2004 meeting, Saudakraukur, Iceland
- Letcher, B. H., T. D. Dubreuil, M. O'Donnell, M. Obedzinski, and K Nislow, Life History Consequences of Variation in Stocking Date for Stream-Dwelling Atlantic Salmon Parr, American Fisheries Society, 2003 Annual Meeting, Quebec City, Quebec, CAN.
- Letcher, B.H, Sources of size variation in stream-dwelling Atlantic salmon parr. Invited seminar, Norway Institute of Nature Research, Trondheim, Norway, 2003
- Letcher, B.H. Sources of size variation in stream-dwelling Atlantic salmon. Invited seminar, Department of Biology , University of Maine, May 2, 2003.
- Letcher, B.H. Determinants of life history variation in stream-dwelling Atlantic salmon. Invited seminar for Biology Department, Worcester Polytechnic Institute, February 18, 2003
- Letcher, B.H., T.D. Dubreuil, M.O. O'Donnell, M. Obedzinski and K. Nislow. Effects of timing of stocking on Atlantic salmon in the West Brook, MA. USFWS Forum on Atlantic Salmon research, Hadley, MA, February, 2003.
- Letcher, B.H. and Nislow, K.H. Determinants of growth and survival across scales: use of parentage assignment to assess heritable variation in juvenile Atlantic salmon. Invited presentation at SALGEN quantitative/experimental workshop, Arrendono, Spain, Sept. 2002.
- Letcher, B.H. Family differences in growth, survival and movement of stream-dwelling Atlantic salmon parr. EEEF meeting, Quebec City, Quebec, September, 2002.
- Letcher, B.H. T.D. Dubreuil, and G. Gries. Incorporation of PIT tag antennas into a long-term, detailed tagging study in a small stream. NMFS PIT tag antenna workshop, Manchester, WA, December, 2001.
- Letcher, B.H. and G. Gries. Life-history dependent morphometric variation in stream-dwelling Atlantic salmon. AIC meeting, Center Harbor, NH, September, 2001.
- Letcher, B.H. and G. Gries. Family differences in growth and survival of individually-tagged juvenile Atlantic salmon. USFWS Forum on Salmon research, January, 2001.



- Letcher, B.H. and G. Gries. Sources of growth variation in individual Atlantic salmon parr in West Brook, MA, USA, International Congress on the Biology of Fishes, Aberdeen, Scotland, 2000.
- Letcher, B.H., F. Juanes and G. Gries. Growth, survival and maturity of individual Atlantic salmon parr in West Brook, MA, USA. Canadian Conference for Fisheries Research, Fredericton, New Brunswick, 2000.
- Letcher, B.H., and T.L. King. Targeted stock identification using multilocus genotype 'familyprinting'. AFS meeting, Hartford, CT, 1998.
- Letcher, B.H., G. Gries, and F. Juanes. Parr maturation at low latitudes: growth, smolting and age-0 maturation. AFS meeting, Hartford, CT, 1998.
- Letcher, B.H., G. Gries, T.D Terrick, and F. Juanes. Growth movement and maturity of individual Atlantic salmon parr in West Brook, MA, USA. International congress on the biology of fish, Baltimore, MD, 1998.
- Letcher, B.H., and T. King. Tools for stream fish restoration: Atlantic salmon genetics, broodstock management and fry marking. Ecology of Stream fish, state of the art and future prospects, 1998, Luarca, Spain.
- Juanes, F., and Letcher, B.H. Ecology of stream fish: insights gained form an individual-based approach. Ecology of Stream fish, state of the art and future prospects, 1998, Luarca, Spain.
- Letcher, B.H, T.L King. Tools for evaluation of anadromous fish restoration: genetics, broodstock management and fry marking. Invited seminar at Dartmouth College, Fall 1997, and at the University of Rhode Island, Winter 1998.
- Letcher, B.H, T.L King. Tools for evaluation of anadromous fish restoration: potential for large-scale genetic marking of Connecticut River Atlantic Salmon. ICES Science Meeting, 1997 (nominated for outstanding paper).
- Letcher, B.H, T.L King. Genetic variability of Connecticut River Atlantic salmon and potential for a genetic mark to identify stocking tributary. American Fisheries Society Meeting, 1997.
- Letcher, B.H, T. Terrick. Effects of fry developmental stage on stocking success, American Society of Ichthyologists and Herpetologists meeting, 1997.
- Letcher, B.H, J. A. Rice, L.B. Crowder, and F.P. Binkowski. Size-dependent effects of continuous and intermittent feeding on starvation time and mass loss in starving yellow perch (*Perca flavescens*) larvae and juveniles. American Society of Ichthyologists and Herpetologists meeting, 1996.